

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Akira HOKAZONO, et al.

SERIAL NO: New Application

GAU:

FILED: Herewith

EXAMINER:

FOR: SEMICONDUCTOR DEVICE HAVING METAL SILICIDE FILMS FORMED ON SOURCE AND DRAIN REGIONS AND METHOD FOR MANUFACTURING THE SAME

INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR 1.97

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

Applicant(s) wish to disclose the following information.

REFERENCES

- ☒ The applicant(s) wish to make of record the references listed on the attached form PTO-1449. Copies of the listed references are attached, where required, as are either statements of relevancy or any readily available English translations of pertinent portions of any non-English language references.
- ☐ A check or credit card payment form is attached in the amount required under 37 CFR §1.17(p).

RELATED CASES

- ☐ Attached is a list of applicant's pending application(s) or issued patent(s) which may be related to the present application. A copy of the patent(s), together with a copy of the claims and drawings of the pending application(s) is attached along with PTO 1449.
- ☐ A check or credit card payment form is attached in the amount required under 37 CFR §1.17(p).

CERTIFICATION

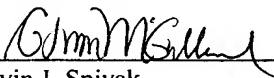
- ☐ Each item of information contained in this information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement.
- ☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the undersigned, having made reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this statement.

DEPOSIT ACCOUNT

- ☒ Please charge any additional fees for the papers being filed herewith and for which no check or credit card payment is enclosed herewith, or credit any overpayment to deposit account number 15-0030. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
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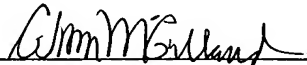
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DOCKET NO.: 247866US2S

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Akira HOKAZONO, et al.

SERIAL NO: New Application

FILED: HERewith

FOR: SEMICONDUCTOR DEVICE HAVING METAL SILICIDE FILMS FORMED
ON SOURCE AND DRAIN REGIONS AND METHOD FOR
MANUFACTURING THE SAME

STATEMENT OF RELEVANCY

Reference AW on Form PTO-1449:

The transformation of NiSi into the high resistivity disilicide (NiSi_2) as well as its agglomeration at elevated temperatures could limit its usefulness in the silicidation process. BF_2^+ is implanted to improve this low thermal stability of NiSi films.

Reference AX on Form PTO-1449:

Rough shaped silicide layer composed by Si, O, Ni. As compound has often caused anomalous junction leakage current. In order to prevent it, incorporation of Nitrogen is applied to the NiSi process.

Form PTO 1449
(Modified)U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICEATTY DOCKET NO.
247866US2SSERIAL NO.
New Application

LIST OF REFERENCES CITED BY APPLICANT

APPLICANT
Akira HOKAZONO, et al.FILING DATE
Herewith

GROUP

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	AA						
	AB						
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						
	AL						
	AM						
	AN						

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	TRANSLATION	
					YES	NO
	AD					
	AP					
	AQ					
	AR					
	AS					
	AT					
	AU					
	AV					

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, etc.)

	AW	A.S.W. WONG, et al., "Enhanced Thermal Stability of NiSi Films on 20KEV BF ₂ + Implanted (100) Si", SYMPOSIUM B SILICON MATERIAL-PROCESSING, CHARACTERIZATION AND RELIABILITY, MRS 2002 Spring Meeting, April 1-5, 2002, 1 Page
	AX	T. OHGURO, et al., "Analysis of Anomalous Large Junction Leakage Current of Nickel Silicided N-Type Diffused Layer and its Improvement", EXTENDED ABSTRACTS OF THE 1993 INTERNATIONAL CONFERENCE ON SOLID STATE DEVICES AND MATERIALS, 1993 Pages 192-194
	AY	
	AZ	

☐ Additional References sheet(s) attached

Examiner

Date Considered

*Examiner: Initial if reference is considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.